INGESYS

TCMS

Control and Monitoring System
for rolling-stock in railway sector

EN 50155 COMPLIANT EN 45545

INGESYS™ TCMS is Ingeteam's control platform applied to controlling and monitoring (TCMS) rolling stock in the railway sector.

The INGESYS™ TCMS platform includes the main automation functions required in a train: the vehicle control unit (VCU), remote I/O units (RIO), software application (HMI), remote condition monitoring (RCM) and interconnection and integration elements related to the different communications buses that exist in the train.
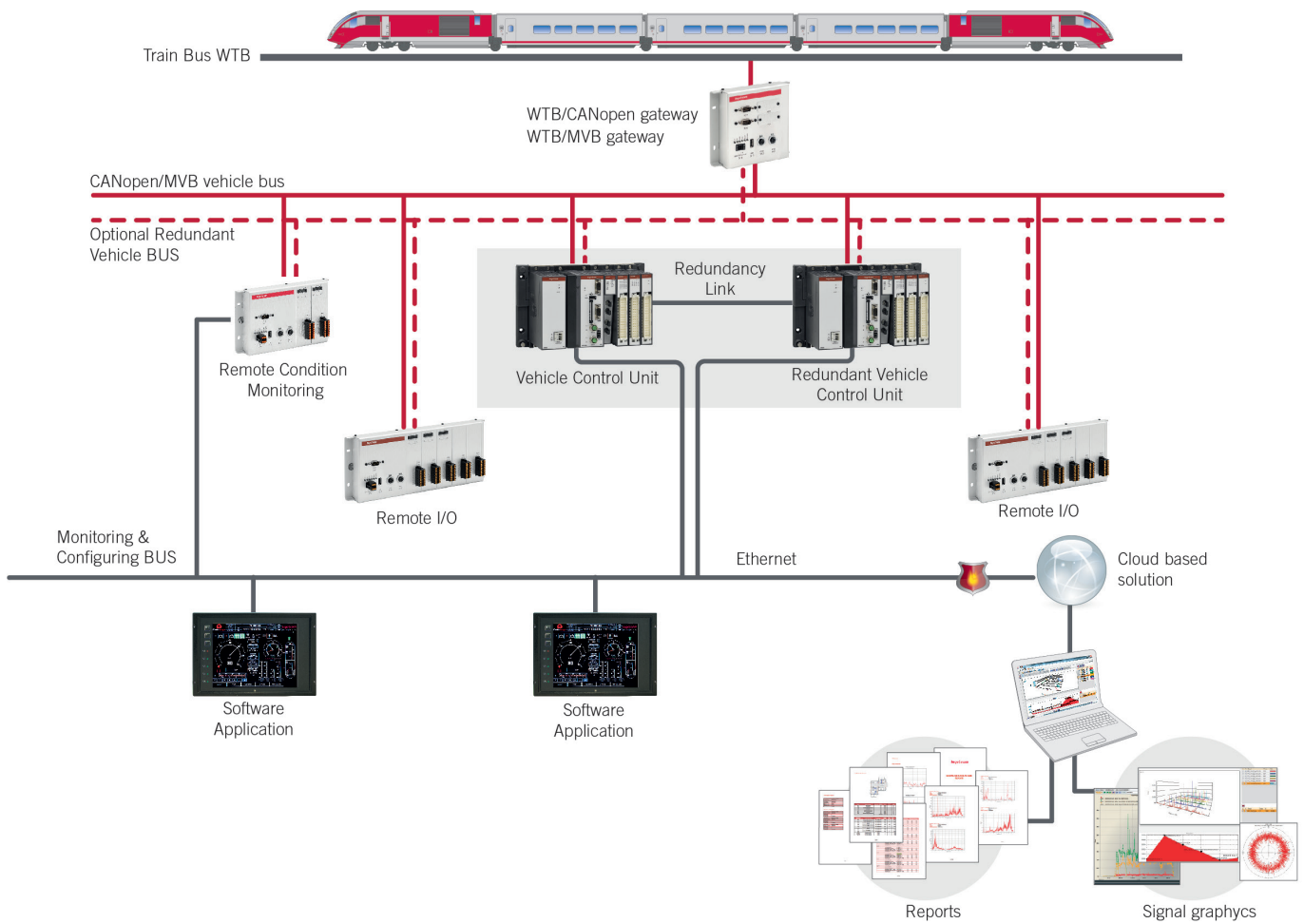
Automation systems

Main Features

· Includes VCU, HMI, RIO, RCM and communication gateway functional features

· Compliance with EN50155 and EN45545-2 standards

· IEC61131, C/C++, MATLAB/SIMULINK programming tools

· Train control application modelling and simulation tool based on MATLAB®/SIMULINK®

· High availability based on solutions with hot standby processor redundancy, communications redundancy and power source redundancy

· The most renowned protocols and communication buses in the railway sector: WTB, MVB, CAN, ETHERNET/IP, TRDP, RS485, etc...

· Advanced maintenance and supervision functions

· 30 years product availability, ensuring repair and maintenance service during 10 additional year

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Ingeteam

	Technical Features
Unit	Windows based processor
	Wide range of power supplies
	IO modules (digital, analogue, temperatures, fast inputs)
	Communication modules
	Rolling stock communication protocols (CAN, Ethernet IP, TRDP, MVB, WTB,...)
	Distributed I/O architecture
Programming	IEC61131-3 standard languages
	C/C++
	MATLAB®/SIMULINK®
Integrated supervision	Events and data log module
	Active alarms and historical data viewer
	Events viewer
	Remote access for parameterising and diagnostics via web services
Centralised supervision	Centralised supervision of the information on all vehicles
	Architecture in the cloud (centralised diagnostics data)
High Availability	Soft and Hot Standby redundancy
	Redundant power supply and I/O topologies
	Communications redundancy
	Hotswap modules
Standards	EN 50155:2017 [Class TX (-40ºC at +70ºC)]
	EN 45545-2

The technical data in this catalogue is subject to change without prior notice. FY40IPTT01_F/1121

Train Bus WTB

WTB/CANopen gateway
WTB/MVB gateway

CANopen/MVB vehicle bus

Optional Redundant
Vehicle BUS

Redundancy
Link

Remote Condition
Monitoring

Vehicle Control Unit

Redundant Vehicle
Control Unit

Remote I/O

Remote I/O

Monitoring &
Configuring BUS

Ethernet

Cloud based
solution

Software
Application

Software
Application

Reports

Signal graphycs